

REMARKS

Applicant cancels claim 3. Claims 1-2 and 4-25 remain pending in the application. Claims 20-21 and 24-25 have been withdrawn from consideration. Applicant amends claims 1, 4, 19, and 22-23 for further clarification. No new matter has been added.

THE REJECTION UNDER 35 U.S.C. § 112

Claims 4-18 and 23 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention.

Independent claims 4 and 23 recite the features of identifying, based on forward management information stored in a storage unit, one or more clients, each of which corresponds to a forward destination of multicast data, generating a same number of copies of received multicast data as a number of identified clients to be forwarding destinations, and transforming each copy of the multicast data into unicast data by changing a destination address of a layer 2 of each copy of the multicast data from the multicast address into the layer 2 address of a corresponding one of the identified clients as a destination address of the layer 2 of the data, wherein each of the pieces of unicast data is transmitted to each of the identified clients.

It is clear what is done to the data in order to have the data become unicast data. The data becomes unicast data

“by changing the destination address of the layer 2 of each copy of the multicast data from the multicast address into the layer 2 address of a corresponding one of the identified clients...”

Accordingly, Applicant respectfully requests that the Examiner withdraw the § 112 rejection.

THE REJECTION UNDER 35 U.S.C. §103(a)

Claims 1-19 and 22-23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,934,759 to Hejna, Jr. in view of U.S. Patent No. 7,254,138 to Sandstrom. Applicant amends claims 1, 4, 19, and 22-23 in a good faith effort to further clarify the invention as distinguished from the cited references, and respectfully traverses the rejection.

Claim 1 recites

“a data generating unit to identify one or more clients, each of which corresponds to a forward destination of the forward data, based on the forward management information stored in said storage unit, and to generate a same number of pieces of transmission data as a number of identified clients, wherein each of the pieces of transmission data includes equivalent contents to the forward data and has an address of a corresponding one of the identified clients as a destination address of the first layer of the transmission data.”

Conventionally, multicast data has multicast address of the first layer corresponding to multicast address of the second layer higher than the first layer as destination address. In the case where the first layer is a layer 2 defined on the OSI model and the second layer is a layer 3 defined on the OSI model, the multicast data has MAC multicast addresses corresponding to IP multicast addresses showing IP destination addresses. A layer 2 switch forwards the multicast data to one or more forwarding clients by copying the multicast data. Then, the multicast data forwarded by the layer 2 switch also arrives at clients that are not receivers of the multicast data. This is because of the feature of the layer 2 switch that sends copies of the multicast data from all ports of the layer 2 switch when receiving the multicast data, broadcast data and unknown address data.

As recited in claim 1, the claimed data generating device rewrites the destination address of the first layer of the multicast data from the multicast address to the address of a corresponding one of identified clients. In short, the multicast data is transformed into

unicast data at the first layer level. For example, when the first layer is the layer 2 defined on the OSI model and the second layer is the layer 3 defined on the OSI model, the multicast data has IP multicast addresses corresponding to IP destination addresses and MAC addresses of the identified clients to be forwarding destinations as MAC destination addresses from the data generating device to the layer 2 switch. Then, the layer 2 switch receiving the unicast data forwards the unicast data to the clients without copying. The unicast data does not arrive at the clients that are not the receivers of the multicast data.

Hejna, Jr., as cited and relied upon by the Examiner, merely describes sending data to recipients of a recipient list by broadcast or multicast. Hejna, Jr., thus, does not disclose or suggest rewriting MAC destination addresses of the data to MAC addresses of the recipients that are forwarding destinations.

The Examiner cited and relied upon Sandstrom as a combining reference to specifically address the claimed features in connection with layers of communication data, which the Examiner conceded was absent from the disclosure of Hejna, Jr. Therefore, a combination with Sandstrom would still have failed to cure the above-described deficiencies of Hejna, Jr. with respect to rewriting MAC destination addresses of multicast data to MAC addresses of the forwarding destinations, even assuming, arguendo, that such a combination would have been obvious to one skilled in the art at the time the claimed invention was made.

In other words, even assuming, arguendo, that it would have been obvious to one skilled in the art to combine Hejna, Jr. and Sandstrom, such a combination would still have failed to disclose or suggest,

“[a] data generating device installed on an upstream side of a switching device for performing switching based on data of a first layer, comprising:

a reading unit to read out forward management information relating to a forwarding process of forward data to be forwarded to one or more clients from data of a second layer higher than the first layer;

a storage unit to store the forward management information read by said reading unit;

a data generating unit to identify one or more clients, each of which corresponds to a forward destination of the forward data, based on the forward management information stored in said storage unit, and to generate a same number of pieces of transmission data as a number of identified clients, wherein each of the pieces of transmission data includes equivalent contents to the forward data and has an address of a corresponding one of the identified clients as a destination address of the first layer of the transmission data; and

a forwarding unit to forward each piece of transmission data generated by said data generating unit to the switching device,” as recited in claim 1. (Emphasis added)

Accordingly, Applicants respectfully submit that claim 1, together with claim 2 dependent therefrom, is patentable over Hejna, Jr. and Sandstrom, separately and in combination, for at least the foregoing reasons. Claims 4, 19, and 22-23 incorporate features that correspond to those of claim 1 cited above, and are, therefore, together with claims 5-18 dependent from claim 4, patentable over the cited references for at least the same reasons.

In view of the remarks set forth above, this application is in condition for allowance which action is respectfully requested. However, if for any reason the Examiner should consider this application not to be in condition for allowance, the Examiner is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged to Deposit Account No. 50-1290.

Respectfully submitted,

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